Commonwealth of Kentucky
Division for Air Quality

RESPONSE TO COMMENTS

ON THE TITLE V DRAFT PERMIT V-03-014
KENTUCKY ENERGY PROJECT, LLC
308 MAIN STREET, KY. 41240
DECEMBER 19, 2003
BEN MARKIN, REVIEWER
PLANT I.D. # 021-115-00051
APPLICATION LOG # 54822

SOURCE DESCRIPTION:
Kentucky Energy Project, LLC proposes to construct and operate an electric generating and a used oil facility in Paintsville, Kentucky. The power plant will consist of one 85 megawatt (MW) General Electric (GE) frame 7EA combustion turbine equipped with a heat recovery steam generator (HRSG), and one steam turbine. The supporting unit for the turbine includes cooling towers, storage tanks for water and backup No. 2 fuel oil, an emergency diesel generator, and an emergency diesel fire pump. Waste heat from the combustion turbine exhaust will be recovered and converted to steam by the HRSG. The steam will be delivered to be used by the oil recycling plant for heating and to the steam turbine to produce additional power- thus combined-cycle production. A selective catalytic reduction (SCR) system and an oxidation (thermal oxidizer) catalyst will be installed within the HRSG to control NOx and CO emissions, respectively. The thermal oxidizer provides both heat for the process and emissions control, with a destruction efficiency rated at 99.96 percent. The No.2 fuel oil for the power plant will be supplied by the onsite used oil recycling plant, which is capable of processing up to 7,000 gallons per hour of used oil, through this one-step process of thermal cracking and distillation. The thermal cracking will yield the No. 2 fuel with a yield of 70-90 percent feedstock, No. 5 fuel oil and light ends products, primarily naphtha, of boiling point less than 200^{o}F. The three (No.2, No.5 and light ends) are sent to storage tanks residing on the tank farm. The tank farm consists of

1. Four (4) 250,000 gallon No.2 fuel oil storage tanks
2. One (1) 170,000 gallon No.2 fuel oil storage
3. One (1) 50,000 gallon naphtha storage tank
4. Six (6) 250, 000 gallon used oil storage tanks
5 One (1) 25,000 gallon No. 5 oil storage tank

PUBLIC AND U.S. EPA REVIEW:

On June 4, 2003, the public notice on availability of the draft/proposed permit and supporting material for comments by persons affected by the plant was published in *The Paintsville Herald* Paintsville, Kentucky. The public comment period expired 30 days from the date of publication.

Comments were received from Tom FitzGerald of Kentucky Resources Council, Inc. on June 29, 2003. Attachment A to this document lists the comments received and the Division's response to each comment. Minor changes were made, and additional operating limitations were added to the permit as a result of the comments received, however, in no case were any emissions standards, or any monitoring, recordkeeping or reporting requirements relaxed. Please see Attachment A for a detailed explanation of the changes made to the permit.

The permit is now being issued as a proposed permit. U.S. EPA has 45 days from the date of the

issuance to submit comments. If no comments are received during this period, the Division will consider the permit final as conditioned.

ATTACHMENT A

Response to Comments

Comments and Suggested Revisions on the Draft Title V Permit submitted by Tom FitzGerald, Kentucky Resources Council, Inc.

Comment:

In reviewing the proposed permit, it was not apparent that any constraints have been placed on the source(s), composition and nature of contaminants contained in the "used oil." In order to assure that the chemical and physical composition of the fuel and the fate and transport of such constituents during combustion is fully understood, and that appropriate constraints are imposed to prevent emission of regulated hazardous air pollutants or air toxics in violation of 401 KAR 63:020, the Council suggests that appropriate inquiry be made and conditions imposed to assure compliance with all applicable regulations. Specifically, the Council suggests:

1. The term "used oil" be defined in the permit in order to clarify the acceptable sources and types of oil, and to prevent inadvertent acceptance and use of oils that could pose a threat to the environment and thus be considered as hazardous wastes.

EPA defines used oil as oils refined from crude or synthetic oils that have been used and as a result have been contaminated by physical or chemical impurities. Certain oils are excluded from EPA's definition of used oil and should likewise be excluded from use by the facility absent compliance with hazardous waste regulations for TSD facilities; including products such as antifreeze and petroleum distillates used as solvents.

Division's Response:

The Division acknowledges the comment, and the permit has been amended to restrict oils that have products like antifreeze and petroleum distillates used as solvents.

Comment:

2. A full characterization of the fuel and the fate, including partitioning and transport, of any toxics or hazardous air pollutants, must be provided, and limitations imposed both in fuel composition, combustion conditions and control equipment, to prevent emission of toxic air pollutants in harmful quantities (401 KAR 63:020).

Used oil may contain any number of constituents of concern, including arsenic, cadmium, chromium, lead, PCBs and halogens. The used oil must be properly characterized, and appropriate constraints imposed to prevent emissions that may compromise control equipment or result in releases of HAPs or air toxics of concern.

Division's Response:

The Division acknowledges the comment. An investigation conducted by the Division indicates that the recycling unit will be a closed system, and will not emit any gases into the atmosphere. Gases emitted from the recycling/cracking process will be channeled to the thermal oxidizer. In addition, the constituent metal composition from the used oil will be limited as indicated below:

Arsenic	<0.25 ppm

Mercury <0.10 ppm
Selenium <0.10 ppm
Sulfur <700 ppm (0.07%)
Chlorine <450 ppm
The permit has been amended to reflect the "operating limitations" stated above.

Other Additions/Changes:
On Pages 9,10,11 and 12 of the permit, these have been added or amended

Regulation 401 KAR 63:020, Potentially Hazardous or Toxic Substances.

Specific Testing requirements: addition

b) All oil shipments received must be tested (or an analysis obtained from the vendor) to determine the levels of constituents listed under "operating limitations". Each shipment analysis must be available for inspection.

c) The permittee shall conduct formal stack testing within 60 days after the commencement of processing of oils that contain levels of any constituents above the levels listed under "operating limitations", and the testing shall measure for these constituents. If the permittee can demonstrate to the Division's satisfaction that the higher constituent levels will not result in emissions that violate Regulation 401 KAR 63:020, then the Division may waive this testing requirement.

Specific Recordkeeping Requirements:

c) The permittee shall maintain records of the used oil sulfur content monitoring required by this permit.

Has been changed to

c) The permittee shall maintain records to ensure compliance with the limits listed staged in "operating limitations" (above) of each used oil shipment.

Specific Reporting Requirements: addition

d) The permittee shall notify the Division in writing within 15 days of receiving an oil shipment that contains constituents above the levels listed under "operation limitations".